

Integrated Partnership and Sustainability

A Framework for Planning,
Construction, and Maintenance of
Trails.

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Summary

- Sustainability
- Benefits
- Costs
- Partnership



Sustainability

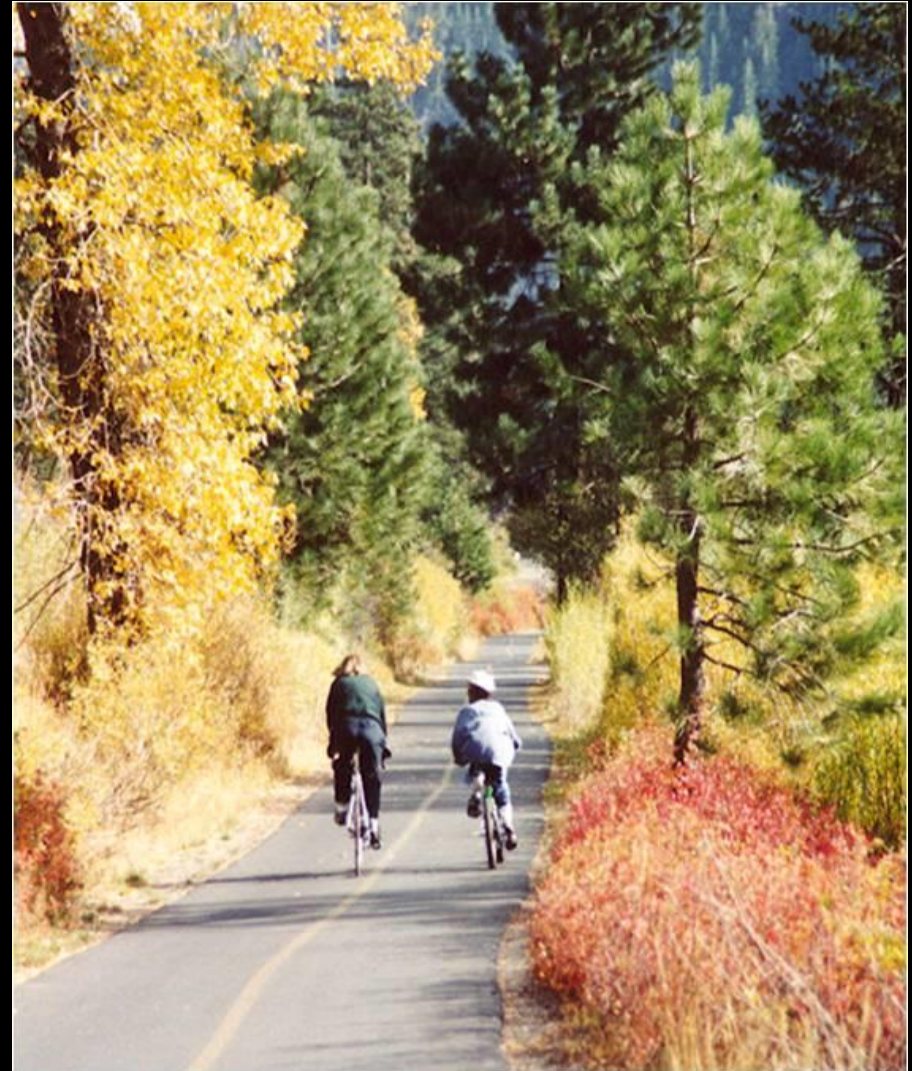
- Economic
- Environmental
- Social

If any of the three aspects of sustainability are not met, then our trail systems will not be sustainable.



Economic Sustainability

- Low Maintenance
- Minimize construction costs
- What are the restoration costs in the future associated with user created trails?
- Local and regional Economic Benefit



Environmental Sustainability

- Develop trail systems that are “invisible” to the landscape.
 - Maintain natural hydrology
 - Develop trails on high capability landscapes
 - Avoid sensitive areas
 - Incorporate and develop sound design principals for the local environment.



Social Sustainability

- If user needs are not met, they will create their own, unmanaged opportunities.

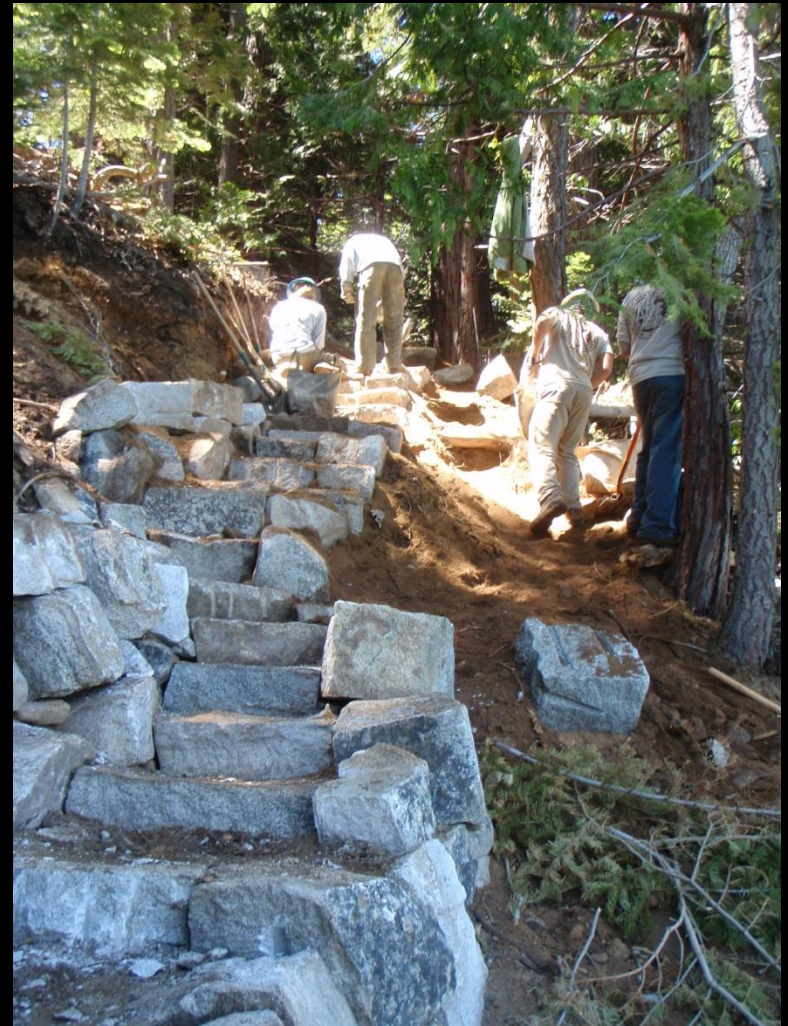


Social Sustainability

- Lack of time or access to convenient outlets for health transportation or recreation opportunities are reasons commonly cited by all demographic groups as barriers to regular exercise.

www.railstotrails.org

Health and Wellness Benefits



Transportation Sustainability

- Link Commercial core areas, neighborhoods, government centers and recreation destinations.
- The best trail systems link urban trails with “single track” trails.



Transportation Benefits

- Improved trail networks often support other public transit programs.
- Reduced VMT and air quality improvements.



Environmental Sustainability

- Trail projects may create opportunities for environmental restoration, in particular if rail or road to trail conversion.
- Opportunities to increase the uses of trails and reduce utility corridors in open spaces by combining trail corridors with utility corridors.



Environmental Sustainability

- Funding (in Tahoe) is often tied to environmental benefits.
- Restoration opportunities are often incorporated into trail projects.



Economic Sustainability

- Create a draw for tourism
- Increased business for street front vendors
- Potential improvements for real estate markets.
- Reduced health care costs.



Facility Costs

- Annual Maintenance
 - Inspection – trail log
 - Paved Surface—
sweeping, stripping,
sign repair, clearing,
hazard abatement
 - Native Surface –
Drainage, tree removal,
sign repair, clearing,
hazard abatement



Facility Costs

- Minor Reconstruction (5 - 10 year cycle)
 - Address Deferred Maintenance!
 - Paved Surface— shoulder work, crack sealing, stripping, kiosk repair benches, user created trail closure/restoration
 - Native Surface – stone work, trailhead maintenance, drainage reconstruction, berm removal/trench backfill



Facility Costs

- Major Reconstruction (10-15 year cycle)
 - Paved Surface – repaving, amenity upgrades, shoulder work, extensive landscape restoration
 - Native Surface – reroutes, ford crossing, stone work, kiosks, tread work, new drainage features



Deferred Maintenance

- Decreased Life Expectancy
- Increased Reconstruction Costs
- Unabated Public Hazards
- Resource Damage
- Visitor expectations not met



Environmental Costs

- Restoration costs
- Impaired Water Quality
- Loss of Habitat
- Soil Loss
- Loss of Ecosystem Integrity



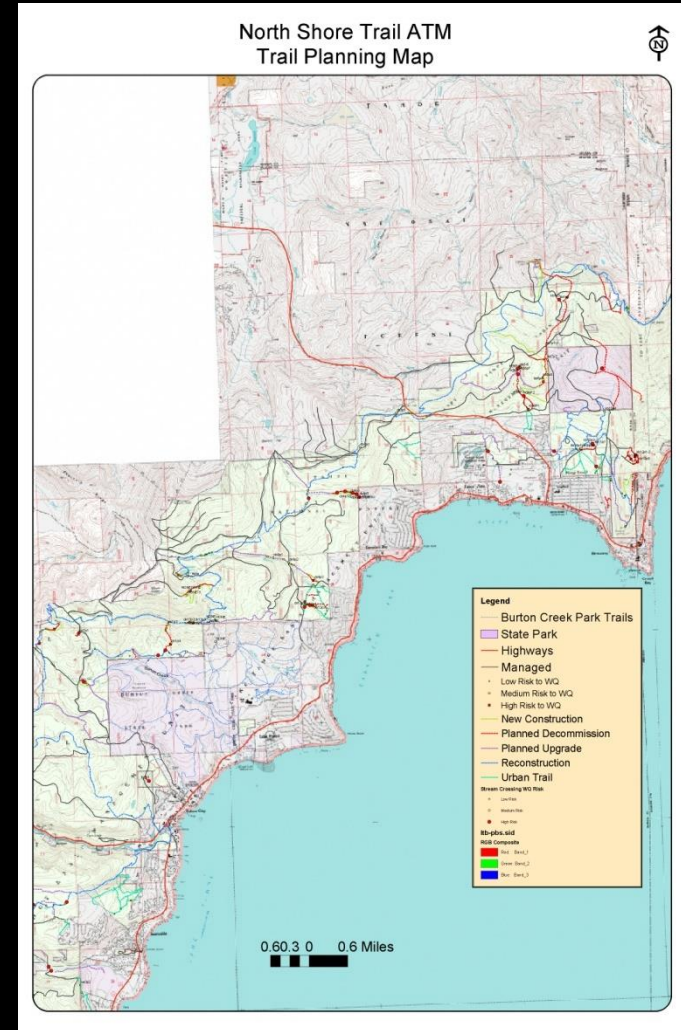
Planning Costs

- Planning Costs can range from 12% to 20% of total project costs
- Planning will allow accurate construction estimating
- Reduce need for future retrofit
- Better Meet Needs
- Prevent Environmental Degradation



Planning Costs

- Establish sustainable principals – priceless
 - Avoid expensive restoration
 - Meet public needs
 - Public involvement



Crew and Equipment

- Training Needs
- Recruitment
- Development
- Equipment
 - Motorized
 - Hand tools



Trail Community Leadership

Leadership for Contractors, Volunteers, and Trail Users provides effective stewardship of the land and building of regional skills.

How?

1. Host trail seminars, like this one.
2. Establish and foster partnership and volunteer programs.
3. Develop trail experts within your agencies.



Other Reference

- Trail Specifications

http://www.fs.fed.us/r1/helena/contracting/96_Trail_Specs_English.pdf

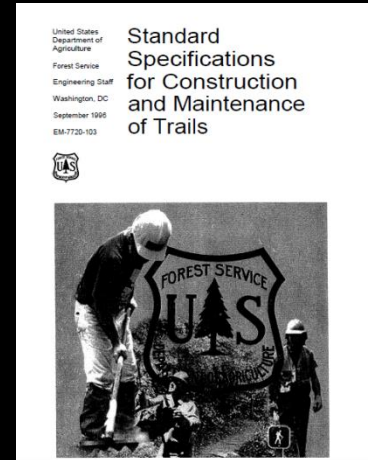
- Trail Maintenance and Construction Notebook.

www.fhwa.dot.gov/download/hep/fspubs/pdf00232839.pdf

- Trail Management Handbook

- Analysis Example

<http://www.fs.fed.us/r5/lbmu/projects/atm/daggett.shtml>



Questions?

